Engineering Services & Supplies Pty Ltd
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Series 2000 Lay-In Conveyor Belt Skirting

MARTIN ENGINEERING

Installation and Operations Manual

Revision	Description of Change	Changed By	Date
A	Added Final Checklist	AS	28/5/07
B	Updated Melbourne Address & Removed SA Address	SH	3/08/09
C	Final Checklist Updated Items 4 & 5 Reversed	SH	15/04/10
D	Revised drawing F0247 Rev C	KO	14/03/11
E	Removed Mt Isa contact details	KO	21/06/12
F	Updated format of manual, added info to sect 4, 4.4	KO	20/2/13
G	Updated office details	KO	11/3/14

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TOLL FREE 1800 074 446 FROM ANYWHERE IN AUSTRALIA
VSS TOLL FREE 1800 300 877

WARRANTY NOTE

ESS* WARRANTS** the **Series 2000 Lay-In Conveyor Belt Skirting** to be free of defects both in materials and workmanship for a period of 12 months from the date of despatch of the product from the ***ESS factory. The warranty given by ***ESS*** in this regard will extend only to replacing or repairing product shown to be defective.

The warranty also is subject to the following restrictions:

(a) Installation of the product contrary to the instructions contained in the supplied manual will void such warranty absolutely;

(b) The warranty will not extend to any liability for injuries incurred and which result from the use of the product contrary to the instructions in the manual;

(c) Save as prescribed by law, ***ESS*** will not be liable for any damage sustained by a purchaser or a third party by way of consequential loss arising out of defects in the product.

You are asked to note that ***ESS*** offers purchasers a service whereby either:

(a) It will install the product and certify the correctness of such installation, or

(b) Certify the correctness or otherwise of the installation of the product by third parties.

This certification service is designed to ensure that you obtain the full benefit of the ***ESS*** warranty hereby provided. If you would like to take advantage of the installation certification service provided, please contact ***ESS*** regarding the service.

Refer to the Final Checklist at the back of this manual.

Visit the ***ESS*** website www.esseng.com.au to register your product warranty.

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Information contained herein is for use in the operation of the **Series 2000 Lay-In Conveyor Belt Skirting**, purchased from ***ESS*** and cannot be passed on to any other party without express permission, in writing, from ***ESS***.

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SECTION 1 - SAFETY

The Series 2000 Lay-In Skirting is designed to be quickly and easily serviced by appropriate personnel.

Under no circumstances should servicing or installation of the cleaner be carried out whilst the belt is in operation.

The conveyor must be shut down and locked out before any person enters or reaches into the conveyor enclosure.

Ensure that only suitably qualified and trained personnel install and service this product. Ensure that all site and statutory safety procedures are followed.

SECTION 2 - INTRODUCTION

ESS 2000 Series Lay In skirting is a conveyor belt skirt seal designed to reduce or eliminate material spillage from conveyor belt load areas.
ESS 2000 Series Lay-In conveyor belt skirting is a further development of the highly successful ***ESS 2000 Series*** skirting system. The ***ESS 2000 Series*** Lay-In system comprises a rubber seal and steel clamping assembly.

The ***ESS 2000 Series*** Lay In skirt seal is attached to the outside of the conveyor chute or skirt plates.The offset shape of the Lay-In skirt bracket clamps the rubber seal at a set distance off the chute wall, allowing the rubber seal to simply lay on the freeboard area of the conveyor. This results in a large area of skirt contact that self adjusts as the rubber seal wears.

ESS 2000 Series Lay-In skirting is suitable for use on most conveyors handling most materials. It is particularly effective however on conveyors that have poor belt support, allowing belt sag under loading, and for skirting of secondary load areas in multiple load point conveyors. Like any skirt seal system, ***ESS 2000 Series*** will perform even better when combined with good belt support and correct load chute design.
In multiple load point conveyors, the primary load point is narrow and skirted by traditional skirt seals (***ESS 2000 Series***), whilst subsequent load points are wider and skirted with Lay-In Skirting so that the relaxed primary material load does not impact on the skirt seals.

SECTION 3 - PREPARATION FOR INSTALLATION

3.1 CHECK INSTALLATION DRAWINGS -

Ensure that you have the correct drawings and equipment for your conveyor(s).

3.2 ASSEMBLE THE NECESSARY TOOLS & SAFETY EQUIPMENT REQUIRED FOR THE INSTALLATION

3.3 OBSERVE THE CONVEYOR WHILE RUNNING AND CONVEYING MATERIAL -

- Determine loading point.
- Note direction of conveyor belt travel.
- Observe conveyor belt tracking. **Conveyor belt must track straight.**
- Observe idlers;

  (i) Ensure conveyor belt does not raise from idlers
  (ii) Ensure idlers are spaced correctly so conveyor belt does not sag. If conveyor belt does sag, fit additional idlers or ***ESS*** GUARDABELT Impact Cradle or GUARDASEAL Belt Support System.

- Observe Material on conveyor belt. Material should be loaded on centre of belt.

3.4 INSPECT WEAR LINERS AND CHUTE WALL -

- Ensure wear liners and chute wall are in good condition (no cracks, holes, slits or grooves).
- Ensure wear liners and chute wall are straight along bottom edge or material will build up between wear liner and the skirting system.

IF ANY OF THE ABOVE PROBLEMS EXIST, CORRECT BEFORE INSTALLATION.
IF PRESENT, REMOVE EXISTING SKIRTING SYSTEM AND MOUNTING HARDWARE. GRIND OR DRESS THE CHUTE WALLS, REMOVING OLD FASTENERS WELD BUMPS OR OTHER RESIDUES.

3.5 UNUSUAL CONDITIONS -

CONTACT *ESS* ON 1800 074 446 before installation if any of the following conditions exist:

- concave or convex curves in chute wall or belt.
- extreme side pressures
- fast (>4.6 m/sec) conveyor belt
- temperature extremes - below 7° C or above 65° C
- corrosive atmosphere

SECTION 4 - INSTALLATION

WARNING: BEFORE PROCEEDING WITH INSTALLATION, ENSURE THAT THE CONVEYOR BELT DRIVE IS FULLY ISOLATED AND LOCKED OUT.

Installation Procedure

Refer to drawing F0247 on rear of manual

4.1 Before commencing installation or any work around the conveyor belt ensure that the belt is isolated and tagged.

4.2 Place fire-resistant drop cloth over conveyor belt.

4.3 If dimension 'A' on existing skirt steelwork is greater than recommended or the lower edge of the skirt plate is worn or damaged, it may be necessary to repair / replace / extend the skirt plate prior to installation.

BELT TROUGH ANGLE	DIM 'A'
15° TO 35°	15
45°	25

4.4 Take an ESS 2000 Lay-In backplate section and position it against the skirt plate so that the top edge is dimension B above the belt (Drawing F0247) and one end is aligned with the start of the skirted section, preferably at the tail end of the conveyor.

Weld the back plate section to the skirt wall using 3mm fillet welds x 25 long at the top edge and plug welds through the 14mm holes. Stagger the fillet welds to the holes. Alternatively bolt the backplate to the skirt using M12 bolts at 150mm centres. A bolt must be present at each slot in the backplate.

BELT TROUGH ANGLE	DIM 'B'
15° TO 35°	255
45°	265

4.5 Repeat step 4 for the full length, simply butting consecutive backplates against each other and maintaining the dimension B above the belt line.

4.5 Insert the skirting rubber from one end. Secure the rubber by placing the ESS 2000 Layin cover plates in position, lightly tapping the wedges to fix the rubber.

4.6 Remove the drop cloth from conveyor.

4.8. Remove danger tags and return conveyor to service, following plant procedures.

NOTE: IF YOU HAVE ANY PROBLEMS, OR ARE UNCLEAR ON ANY INSTALLATION STEP, CONTACT ESS ON CUSTOMER SERVICE NUMBER 1800 074 446.

SECTION 5 - COMMISSIONING

A note on safety:

No additional safety hazards are present with ESS 2000® Layin Skirting other than normal conveyor belt dangers.

In particular:

- Beware of moving conveyor belts.
- Beware of pinch points
- Do not attempt to install, maintain or disassemble any part of a conveyor belt without first isolating and tagging the conveyor drive.

5.1 Following site safety and start-up procedures, start conveyor belt and run under normal conditions for 10 minutes. Observe ESS 2000® Layin Skirting and look for material leakage.

WARNING: BEFORE PROCEEDING WITH COMMISSIONING, ENSURE THAT THE CONVEYOR BELT DRIVE IS FULLY ISOLATED AND LOCKED OUT.

5.2 Lockout / tagout all power to conveyor belt and conveyor accessories.

5.3 Inspect the skirt rubber for wear or leakage..

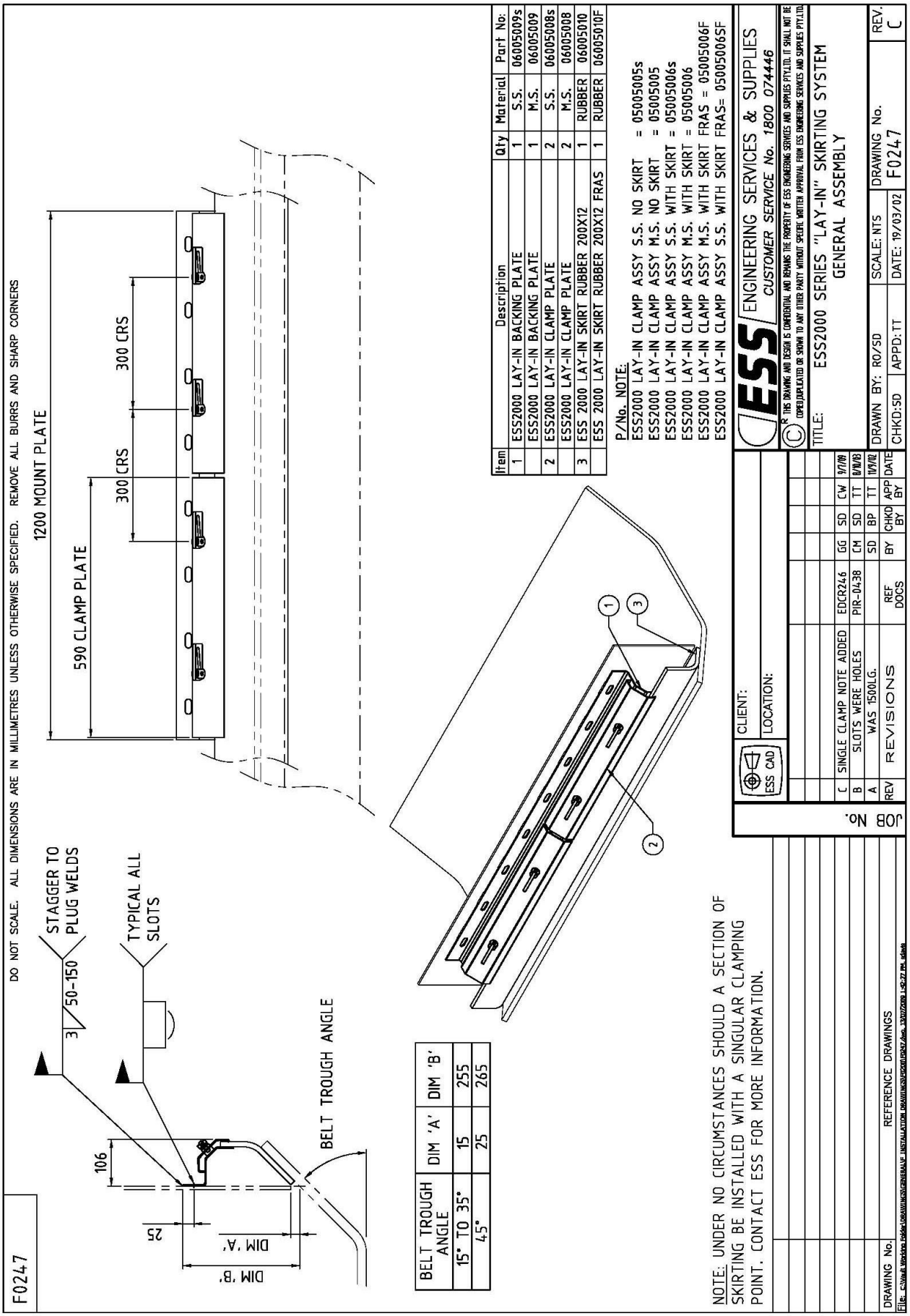
5.4 Remove danger tags and return conveyor to service, following plant procedures.

5.5 Start conveyor and run under normal conditions for one week

Troubleshooting

	PROBLEM	SOLUTION
1.	Conveyor belt won't run after installation.	Check Isolation has been taken off and power reinstated.
2.	Conveyor still won't run	Check power consumption, may require larger motor
3.	Product leaking from under skirting.	Check Belt tracking make sure skirt has not tracked off belt, check material build up on pullies.

SECTION 7 – INSTALLATION ARRANGEMENT DRAWING



Item	Description	Qty	Material	Part No:
1	ESS2000 LAY-IN BACKING PLATE	1	S.S.	06005009s
	ESS2000 LAY-IN BACKING PLATE	1	M.S.	06005009
2	ESS2000 LAY-IN CLAMP PLATE	2	S.S.	06005008s
	ESS2000 LAY-IN CLAMP PLATE	2	M.S.	06005008
3	ESS 2000 LAY-IN SKIRT RUBBER 200X12	1	RUBBER	06005010
	ESS 2000 LAY-IN SKIRT RUBBER 200X12 FRAS	1	RUBBER	06005010F

P/No. NOTE:
ESS2000 LAY-IN CLAMP ASSY S.S. NO SKIRT = 05005005s
ESS2000 LAY-IN CLAMP ASSY M.S. NO SKIRT = 05005005
ESS2000 LAY-IN CLAMP ASSY S.S. WITH SKIRT = 05005006s
ESS2000 LAY-IN CLAMP ASSY M.S. WITH SKIRT = 05005006
ESS2000 LAY-IN CLAMP ASSY M.S. WITH SKIRT FRAS = 05005006F
ESS2000 LAY-IN CLAMP ASSY S.S. WITH SKIRT FRAS= 05005006SF

BELT TROUGH ANGLE	DIM 'A'	DIM 'B'
15° TO 35°	15	255
45°	25	265

REV	REVISIONS	REF DOCS	BY	CHKD BY	APP BY	DATE
C	SINGLE CLAMP NOTE ADDED	EDCR246	GG	SD	CW	9/1/08
B	SLOTS WERE HOLES	PIR-0438	CM	SD	TT	8/11/02
A	WAS 1500LG.		SD	BP	TT	19/3/02

SECTION 8

FINAL CHECKLIST

Site:_____ Number: _____ Date:_____

Site Equipment No./Location: _____ Site Contact: _____

Completed By: _____ **(Circle Yes or No Below)**

1. **Was equipment to ESS Specification?** _____ **Yes/No**

   Drawing No. Ref:_____**Attached? Yes/No**

   If No, WHY _____

   _____

   Will this affect performance? Yes/No

   If Yes, WHY _____

   _____

2. **Was this a standard ☐ service ☐ inspection ☐ installation? Yes/No**

   If No, WHY _____

   _____

3. **Was work carried out as per procedure and JSA? Yes/No**

   If No, WHY _____

   _____

4. **Is equipment fit for commissioning? Yes/No**

   If No, WHY _____

   _____

5. **Was a final inspection carried out while plant was running? Yes/No**

   If No, WHY _____

   _____

6. **Has anything changed from previous service / inspection / installation? Yes/No**

   If Yes, WHAT _____

   _____

7. **Is equipment performance to Client expectations? Yes/No**

   If No, WHY _____

   _____

ESS Signature: _____ **Client Signature:** _____